

Final Operating Committee Minutes

Date: November 15, 2018, 11:00 a.m. – 3:00 p.m.

Location: Green Mountain Power Montpelier, VT

Call-in: 1-866-720-4556, Code: 6027065

PARTICIPATING MEMBERS

- **Burlington Electric Department (BED):** James Gibbons
- **Green Mountain Power (GMP):** Ken Couture
- **Stowe Electric Department (SED):** David Kresock
- **Vermont Electric Cooperative (VEC):** Peter Rossi, Ken Tripp
- **Vermont Electric Power Company (VELCO):** Chris Root, Frank Etori, Jason Pew
- **Vermont Public Power Supply Authority (VPPSA):** Craig Myotte by phone, Stephen Fitzhugh
- **Washington Electric Cooperative (WEC):** Bill Powell

OTHER PARTICIPANTS

John Flynn (VELCO), Colin Owyang (VELCO), Hantz Pr sum  (VELCO), and Mark Sciarrotta (VELCO).

OPENING REMARKS

Mr. Root verified a quorum and called the meeting to order at 11:03 a.m.

SAFETY TOPIC

Mr. Rossi discussed an event he had heard about involving a delivery truck driver. The driver was making a delivery and was going to park in his usual location but there was a pile of leaves in that location. He decided to park in an alternate location because he was unaware of the hazards that could be hidden under the pile. Once he parked elsewhere, he looked at the pile and noticed a hat of a child sticking out of the top. Almost fully hidden was a small child playing in the leaves, if he had continued to park as he normally did, the child would likely have suffered significant injuries.

Mr. Couture discussed a similar event where young children had been playing in a leaf pile on a road and a GMP driver had stopped to investigate. When the driver got out of the car, two children jumped out. The driver escorted the children back to their home and spoke with their parents.

Mr. Root provided a reminder on cyber security and the constant barrage of phishing attempts using email. Mr. Couture discussed a SANS Cyber Security Training program that GMP had made part of their company's mandatory safety obligations.

MINUTES APPROVAL

Mr. Root presented the meeting minutes from October 19, 2018.

Mr. Couture moved for approval, Mr. Gibbons seconded, and the minutes were approved without objection.

VEC CAR POLE ACCIDENT ANALYSIS

Mr. Rossi provided a review of outages and outage duration by year from car pole accidents within the VEC operating area. Included in the presentation were other accidents that did not involve vehicles such as dig-ins and other “accidents” that caused outages.

Reviewing the data revealed:

- Fridays had the most occurrences
- The months of June, July, and August had the highest concentration
- Time of day most prevalent was tied between 1pm, 2pm, and 6pm

Mr. Rossi reported that FEMA is promoting projects to move lines from wooded areas to roadsides. This is effectively increasing the odds of car pole accidents while reducing the number of vegetation outages.

The System Average Interruption Duration Index (SAIDI) impacts were discussed and the majority of outages were caused by vegetation. It was noted that in some areas the VEC ROW is only 40 feet. VEC has identified over three thousand danger trees throughout their system.

Mr. Rossi reported that a third party consultant (Arborcision) reviewed the VEC ROW and identified types of trees, growth rates, and other information to assist in determining a best practice ROW maintenance program. They had indicated that in some areas of the VEC system, a four-year trimming cycle would be ideal.

As part of the ROW maintenance review, Mr. Rossi discussed a white paper he had found while researching tree damage and SAIDI. The paper found that a 5mph increase in wind gusts caused significantly more damage. Looking at the Burlington airport, there had been approximately 2500 events that would have generated weather/wind warnings, which had significantly increased in recent history. He found this correlated with tree damage on the VEC system.

Additionally, the study indicated that underground infrastructure was much more reliable. The cost of underground was discussed and the significant additional expense did not outweigh the cost of maintaining overhead infrastructure.

VELCO EMERGENCY RESPONSE PLAN ANNUAL EXERCISE

Mr. Pew provided an overview of VELCO’s annual Emergency Response exercise. VELCO performs an annual exercise of the Emergency Response Plan (ERP) and Business Continuity Plan (BCP). This year’s exercise was a tabletop drill where participants were provided five scenarios and an allotment of time to form responses and discuss issues. The basis of the exercise was that a series of events in New England resulted in a regional blackout during an extreme cold snap where fuel supplies for New England generators played a role.

The ERP/BCP roles, consistent with the Incident Command System (ICS), were established prior to the exercise. The core ICS team drove the discussions and other participants interjected as appropriate to support and/or confirm specific areas and situations. Topics that were discussed included: winter/cold weather safety concerns, equipment damage and cold weather preparations, ERP department checklists (preparedness checks), fuel supplies

for vehicles, buildings, generators, mountain top radio sites, etc., fuel conservation and DC loads at substations and radio sites, family and home preparedness, employee expectations and roles, the use of cash and its distribution.

The final exercise report is being drafted and specific action items to address plan deficiencies and noted enhancements have yet to be approved.

ROLLING BLACKOUTS

Mr. Root discussed the need for Vermont to have plans for rolling blackouts. Should an event similar to the VELCO ERP annual exercise occur and New England was required to have extended hours of necessary load shed the VT Distribution Utilities (VDU) should be prepared to rotate the affected areas.

It was noted that currently the VDUs have plans to shed 50% of their respective loads in 10 minutes, as required by ISO-NE. Mr. Pew noted that VELCO is responsible to cover loads that are not under the direction of a 24/7 Control Center. This is done by shedding various sub-transmission facilities via VELCO SCADA. The ability to shed load is simulated within New England on a monthly basis.

Mr. Root discussed the impact to customers if they were left without power for an extended period; it becomes a health and safety concern. Rotating the affected area could lessen the impact to single areas.

Mr. Tripp discussed the effects of cold load pick-up, which can be in excess of 150% of the normal circuit loading. Having historic load data available can assist with the location and magnitude of loads within their system.

Mr. Etori suggested that each VDU report at a later meeting on the current plans each have to shed load and include any plans on how to perform rotational load shedding.

Mr. Root expressed his desire to ensure plans are in place to perform rolling blackouts prior to the need. This ability will contribute to Vermont's resiliency.

ISO NEW ENGLAND UPDATE

Mr. Etori provided an overview of the New England Markets Committee activity from the past months, which included market changes for fuel security. The following proposed market changes were discussed as potential fuel security mitigations.

1. A Multi-day market (six or seven days ahead). This would allow for optimizing limited energy inventories over several days when a forecasted cold weather event was imminent and natural gas supplies would limit the operation of natural gas generation capacity.
2. An Ancillary Service in Real-time and Multi-Day Ahead markets. This would provide a price signal to maintain a "buffer stock" of energy inventory for use in optimization as of resources.

Mr. Etori provided a review of the VT generators that participate in the VAR payment market. Burlington Electric Department has recently added two units to the current list. The market provides a value of \$1.11/kvar-year per unit; those with generators not currently in

the market should consider participation.

WEATHER WORK WITH NORTHVIEW WEATHER

Mr. Root discussed that VELCO is looking into contracting with Northview Weather to supply an ice model with the goal to predict how much ice buildup on transmission conductors, not an outage prediction model. VELCO will take the information to determine potential areas of conductor loading that could lead to cross arm, structure, or other facility damage.

Mr. Rossi reported that VEC is discussing an agreement with Northview Weather as well. Specifically, VEC is looking to purchase multiple products in support of VEC outage prediction and storm response. He reported that the available tools have provided valuable and accurate forecasts that are easily understood.

Mr. Root reported that VELCO is considering running the IBM Deep Thunder model on the VELCO High Performance Computing Cluster (HPCC) as it is currently being run on Utopus Insights equipment.

LARGE SCALE SOLAR INSTALLATION

Mr. Presume presented on active VT interconnection projects as indicated in the ISO queue. A link to the source data is included in the slides (<https://irtt.iso-ne.com/reports/external>).

The majority of the solar plants identified are not for VT consumption; these are likely to be sold out of state and do not contribute to the state's energy goals (<https://irtt.iso-ne.com/reports/external>).

Noteworthy out-of-state battery storage projects were identified and discussed.

Nearby active interconnection projects were identified and discussed. Specifically, projects in NH and MA that could affect VT facilities as they would likely affect power flows through VT. These projects are being actively studied and VELCO Planning is monitoring their respective progress.

OTHER BUSINESS

Open discussion

Participation in the Emerald Ash Borer (EAB) Group was discussed. Mr. Gibbons inquired about a charter for the EAB Group. A list was circulated and additions were made to include WEC and BED participation. Mr. Fitzhugh reported that he would investigate further and discuss potential options for participation with various VPPSA members. The EAB working group participants list will be circulated for OC member review.

Next meeting

Date: December 20, 2018, 11:00 a.m. – 3:00 p.m.

Location: Green Mountain Power Montpelier, VT

Possible topics for discussion

- Mr. Rossi offered to circulate the White paper referenced in the car pole presentation
- Review the proposed EAB Group Charter
- Mr. Tripp reported that VEC is working on a project to assist with damage identification via a drone and he could review at a future meeting
- Mr. Root suggested
 - Board of Directors update
 - Coolidge solar interconnection
 - Ascutney SVC overview
- Tentatively proposed as a future topic, early 2019 was a review of each of the Vermont Distribution Utility load shed plans as this could assist with identification and readiness of implementing rolling blackouts.

MOTION TO ADJOURN

Mr. Fitzhugh moved to adjourn, Mr. Gibbons seconded, and the meeting was adjourned at 02:33pm.

Respectfully submitted,

Jason Pew
VELCO OC Secretary